



Consultation on breakpoints for mupirocin

The proposals are for discussion in the national breakpoint committees (BSAC, CA-SFM, CRG, DIN, NWGA, SRGA) and the Expert Rules Subcommittee. They are also distributed for consultation with the EUCAST General Committee, the EUCAST consultation networks and via the EUCAST website.

Comments should be sent to the EUCAST Scientific Secretary (derek.brown222@btinternet.com). The deadline for receiving comments from all groups is 31st March 2010.

Please support any suggestions for modifications with references and/or data.

Breakpoints for mupirocin

Mupirocin use is limited to nasal decolonization of *Staphylococcus aureus*, particularly MRSA, as part of decolonization regimens.

The EUCAST approach to breakpoints for topical agents is:

1. If the agent is also used systemically then the same breakpoints are applied to topical use.
2. If the agent is only for topical use then breakpoints are based on microbiological data unless there are clinical data relating MIC to outcome.

The current proposal made by the EUCAST Steering Committee (8-9 February, 2010) is as follows:

For *Staphylococcus aureus* the proposed breakpoints are:
Susceptible ≤ 2 mg/L, Resistant >256 mg/L.

Wild type isolates will be reported susceptible.

Low-level resistant isolates will be reported intermediate.

High-level resistant isolates will be reported resistant.

Rationale for proposed breakpoints

Mupirocin MICs for wild type isolates of *S. aureus* are ≤ 0.5 mg/L. Resistance to mupirocin may be mediated by two mechanisms. Mutation of the chromosomal *mupA* gene confers low-level resistance (MIC 8-256 mg/L). A plasmid-mediated version of the *mupA* gene confers high level resistance (MIC >256 mg/L).

Clinical studies indicate that topical mupirocin treatment is effective in nasal decolonization of wild type *Staphylococcus aureus* (Perl et al, N Eng J Med 2002; 346: 1871-7; Konvalinka et al, J Hosp Infect 2006; 64: 162-8; Doebbeling et al, Clin Infect Dis 1993; 17: 466-74; Hansen et al, Infection 2007; 35: 260-4). Low-level resistant isolates are initially cleared as effectively as wild type isolates but recolonization, probably due to endogenous relapse, is very common whereas clearance rates for high-level resistant isolates are low. (Walker et al, Infect Control Hosp Epidemiol 2003; 24: 342-6; Harbarth et al, Antimicrob Agents Chemother 1999; 43: 1412-16).

Short term clearance of low-level resistant isolates may be worthwhile if the objective is to reduce colonization prior to elective surgery, but it is important to recognise that recolonization is likely with low-level resistant isolates. Hence they are reported intermediate.